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SATIATION THERAPY: A PROCEDURE FOR REDUCING DEVIANT SEXUAL AROUSAL

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Two single-case experiments demonstrated the efficacy of satiation therapy with adult males who had long-standing deviant sexual interests. The procedure involves the pairing of prolonged masturbation (1 hour) with the verbalization by the patient of his deviant sexual fantasies and in both cases the designs permitted the attribution of control over aberrant responding to the satiation therapy. The results are discussed in terms of the possible active ingredients of the procedure.

DESCRIPTORS: satiation, deviant sexuality, pedophilia, fetish, penile responses, adult males

Behavioral approaches to the modification of deviant sexuality have broadened their focus over the past few years to deal with various aspects of the patient's functioning (Abel, Blanchard, and Becker, 1977; Marshall and Williams, Note 1), but changes in sexual responsivity remain an important treatment target. In some cases (Herman, Barlow, and Agras, 1974), simply increasing responses to appropriate sexual material is sufficient to satisfactorily rearrange arousal patterns, but this is not always the case (Barlow and Agras, 1973), and most treatment programs include a component aimed at reducing deviant interests.

Various procedures have been utilized in attempting to reduce sexual arousal to deviant stimuli or acts, with aversive therapy and covert sensitization being the most popular (Barlow and Abel, 1976). There is substantial evidence for the efficacy of aversive therapy with sexual deviates (Bancroft, 1974) and some support for the value of covert sensitization (Barlow, Leitenberg, and Agras, 1969; Brownell, Hayes, and Barlow, 1977; Callahan and Leitenberg, 1973). Similarly shame aversion therapy (Serber, 1970), or its variant "aversive behavior rehearsal," has been shown to eliminate deviant sexual behavior effectively (Wickramasekera, 1976).

Despite the positive findings with these procedures it should not be concluded that they are uniformly effective. The most careful application of aversive therapy or covert sensitization or shame aversion occasionally fails to produce changes in some patients. The reason for this is not clear at the moment, and research is sorely needed to clarify which patients will profit from which procedures. In the meantime, however, there is a need for alternative approaches that may succeed where the established techniques fail or are not appropriate.

For pedophiles and rapists (the usual patients in our treatment program) shame aversion does not seem suitable. This particular procedure lends itself to the treatment of exhibitionists where the enactment of the deviant behavior before a cooperative, if disapproving, audience presents no legal or ethical problems. It is, however, difficult to see how one could legitimately, or in good conscience, encourage the actual performance of the behaviors associated with rape or child molestation.

In those cases where aversive therapy or covert sensitization has not been effective in reducing deviant arousal we have, over the past two years, turned to a novel procedure which we call "satiation." This procedure was devel-

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oped as a result of our consideration of a broad range of literature concerned with sexual functioning.

McGuire, Carlisle, and Young (1965), for instance, observed that the majority of sexual deviates use deviant fantasies during genital arousal, and they concluded that this practice of pairing inappropriate fantasies with arousal was the basis for maintaining deviant sexual behavior. McGuire *et al.* (1965) suggested that the most effective treatment for such individuals would, therefore, involve the direct modification of fantasies during sexual arousal. Other researchers have noted the important role of fantasies in deviant sexuality (Abel and Blanchard, 1974; Evans, 1968; Gebhard, Gagnon, Pomeroy, and Christenson, 1965; Hackett, 1971), and successful aversive therapy programs have been devised that target these deviant fantasies (Abel, Levis, and Clancy, 1970; Marshall, 1973).

If associating deviant fantasies with genital arousal is indeed the practice that maintains inappropriate sexual behavior, then eliminating this practice should be the most effective route to modifying sexually offensive acts. The aversive therapy programs based on these observations have not required the patient to engage in the supposedly maintaining practices (*i.e.,* fantasizing inappropriately during sexual arousal), but have attempted simply to reduce the erotic value of the deviant fantasies presented by the therapist. Clearly a more direct procedural implication of the above theorizing would recreate the target behavior by requiring the patient to generate his own fantasies while engaging in sexual activity (*e.g.,* while masturbating).

Having clarified this procedural aspect we are then faced with the problem of how to make these activities less attractive. Associating these behaviors with an unpleasant event (*e.g.,* an electrical stimulus) is one obvious solution but, of course, would be of little value with those patients for whom aversive therapy has failed.

The continued repetition or uninterrupted evocation of certain behavioral patterns appears to lead to a reduction in the future probability of those behaviors (Dunlap, 1932; Yates, 1958), and the same may be true for sexual behavior. Indeed, there is evidence that people tire of repetitious sexual behaviors (Masters and Johnson, 1970), and become bored with the specific sexual fantasies elicited by pornography (Kutchinsky, 1970). Of course, these changes generally refer to a reduction in the erotic potency of specific instances of sexual activities (*e.g.,* particular routinized acts with a particular person, or a specific depiction of sexual behavior), rather than the extinction of complex classes of behavior (*e.g.,* heterosexuality, fetishism, and so on). However, it may be possible, by introducing sufficient variations over prolonged periods, to extinguish the attractiveness of classes of activities (*e.g.,* rape, pedophilia, or fetishism) by this repeated practice. Marshall and Lippens (1977) described the clinical illustration of the application of this "satiation" procedure, but they did not provide data demonstrating control over the deviant behavior. The present report provides such evidence with two single cases.

CASE 1

A 33-year-old male volunteered for treatment after having been discovered engaging in sexual acts with the 13-year-old daughter of a neighboring family. The patient was married, with young children, and had an apparently satisfactory sexual relationship with his wife. He had never molested his own children, and he had intercourse approximately 3 times per week with his wife. However, on these occasions the patient reported that he found it necessary to imagine one of his preferred deviant partners or activities in order to maintain arousal during intercourse.

Several interviews revealed a long history of heterosexual pedophilia involving young girls ranging in age from 4 years to 14 years. He had had intercourse with only one girl (the 13-year-old with whom he was presently in-

volved) and usually limited his activities to exposing, fondling, and mutual oral sex. The patient would typically seek out children at playgrounds and offer them money or candy to go with him to some private place. He was very cautious usually so that he had a low rate of success in terms of possible contacts, but he spent a good deal of his waking hours in pursuit of young girls and estimated having had sex with more than 25 young girls over the preceding 6 years. He also reported that he had long-standing fetishisms for women's underwear and women's shoes.

PROCEDURE

Assessment

Since rate of actual deviant behavior was rather low and in any case could not be independently observed, it was necessary to provide other dependent measures that did not rely on the patient's self-report. Measures of penile erectile changes appear to be the most accurate descriptions of sexual interests (Zuckerman, 1971), with circumferential measures being among the more satisfactory (Barlow and Abel, 1976). Exhaustive analyses of this patient's erectile responses revealed strong preferences for two distinct age groupings of young girls (6 to 8 years and 11 to 13 years), with the physical features of these groupings being the important distinguishing characteristics. He preferred young girls whose genitalia had the appearance of what he called "children's swelling," by which he meant the noticeable external features of the labia. He also liked the fact that very young girls had no breasts, no pubic hair, and no "female" shape. For the 11- to 13-year-olds, the desired features included the just noticeable beginnings of breast development, the presence of some pubic hair, and slight changes in shapeliness. The patient also discussed these two age groupings in quite different ways reporting different sexual activities relating to each group and even using different descriptors for the erogenous zones of these young girls depending on their age.

In addition, the patient showed strong erectile responses to females' shoes and underwear (panties, pantyhose, and a slip all showed similar patterns so the responses to panties were taken as representative), and weak responses to adult females. Accordingly, the patient's erectile responses were measured across three baseline assessment periods spaced 1 day apart. A mercury-in-rubber strain gauge (Bancroft, Jones, and Pullan, 1966) was placed around the patient's penis and while he was seated comfortably, he listened, through headphones, to tape-recorded descriptions of his personalized sexual fantasies. The patient was instructed to pay attention to the fantasies and to become as sexually involved as he could in each of them. He was told the purpose of the assessments and indicated that he was willing to cooperate fully. These sexual fantasies described his preferred activities concerning the various deviant and appropriate stimuli. Each stimulus category (*i.e.,* female children 6 to 8 years; female children 11 to 13 years; shoe fetish; underwear fetish; adult females) contained three fantasies, and responses were averaged across these three fantasies to produce a score for each category.

A plethysmograph (Parks Electronics, Model 270) monitored conductance of the mercury column with the resultant output being fed to a digital voltmeter (DVM, Hewlett Packard, Model 3430A). The output of the DVM was recorded every 10 seconds during the 2-minute fantasy presentation. Responding was allowed to return to approximately resting levels between each fantasy presentation, and this, added to the actual exposures to the fantasies, resulted in the assessment sessions lasting for approximately 70 to 80 minutes each.

During the intervention part of the study, the assessments were completed at the same sessions as treatment and preceded therapy by a 15-minute rest break. Figure 1 describes the patient's erectile data in terms of the average amplitude of responses to the various categories of stimuli where amplitude is expressed as a percentage of full erection.

Self-ratings of sexual interest in the various stimuli were obtained at the sessions indicated in Table 1 by asking the subject to rate each of the fantasies immediately after its termination. He was to rate the stimuli using a percentage scale where 100% represented maximal arousal. All the assessments were conducted by the same experimenter who also served as the therapist.

Treatment

A multiple baseline across behaviors design was used as shown in Figure 1. The sequence of treatment involved targeting, in turn, different categories of simuli using the satiation procedure. After three baseline assessments, the patient was required to seat himself in a darkened room where his only contact with the therapist was via an audio-intercommunication system. The subject was instructed to remove his trousers and commence masturbating, while at the same time verbalizing aloud every variation he could think of on the fantasies associated with the targeted category.

For the initial six 1-hour treatment sessions (ST1), the targeted category was female children aged 6 to 8 years. The patient was told to masturbate continuously throughout the 1-hour session so that even if he ejaculated he was to continue, stopping only to wipe himself clean if he found this necessary. Monitoring through a one-way screen and the sound system revealed that the patient followed the instructions closely, although the quality of his verbalized fantasies changed throughout treatment. The quality of these fantasies was rated by the therapist during treatment on a 10-point scale where 10 represented good quality. Good quality was defined in terms of fluency, variations on the theme, and coherent and detailed development of each fantasy. No check was made on the reliability of this estimate as it was only meant to be an indicator of quality rather than a rigorous description.

Treatment sessions were held every second or third day. When erectile responses to the 6- to 8-year-old girls was reduced to criterion (below an average amplitude of 10% full erection), the category of young girls 13 to 14 years of age was targeted (ST2). When this was successfully modified, ST3 targeted the women's underwear fetish, and subsequently ST4 targeted the women's shoe fetish.

In an attempt to increase responding to adult females, which had remained rather low despite success on reducing deviant arousal, self-managed orgasmic reconditioning (OR1), as proposed by Marquis (1970), was initiated after session 17. This was not initiated earlier because the patient at that time described his deviant fantasies as too strong to resist, and he claimed that it would have been impossible for him to follow the procedure. OR1 was continued until session 20, thereby overlapping with ST4 which was not completed until session 18. OR1 required the subject to replace in his masturbatory fantasies the images of deviant activities with images of appropriate adult heterosexual behaviors. At this stage in treatment he was able to do this, but the effects on erectile responding were negative, so the program was transferred to the treatment room.

OR2 was similar in many respects to the satiation procedure except for two important factors. The fantasies were supplied by the therapist in the form of verbal descriptions of cooperative mutually enjoyable sexual activities between the patient and an adult female with emphasis on the enjoyable physical sensations. Thus the patient did not have to produce the fantasies himself as he did in satiation. The other point of difference between OR2 and satiation was that the session continued only until the patient ejaculated at which time the descriptions stopped, and the patient was instructed to rest and think about the enjoyable experience and the pleasant postejaculation feelings.

Results

Figure 1 clearly depicts control as a result of the introduction of satiation. Although there

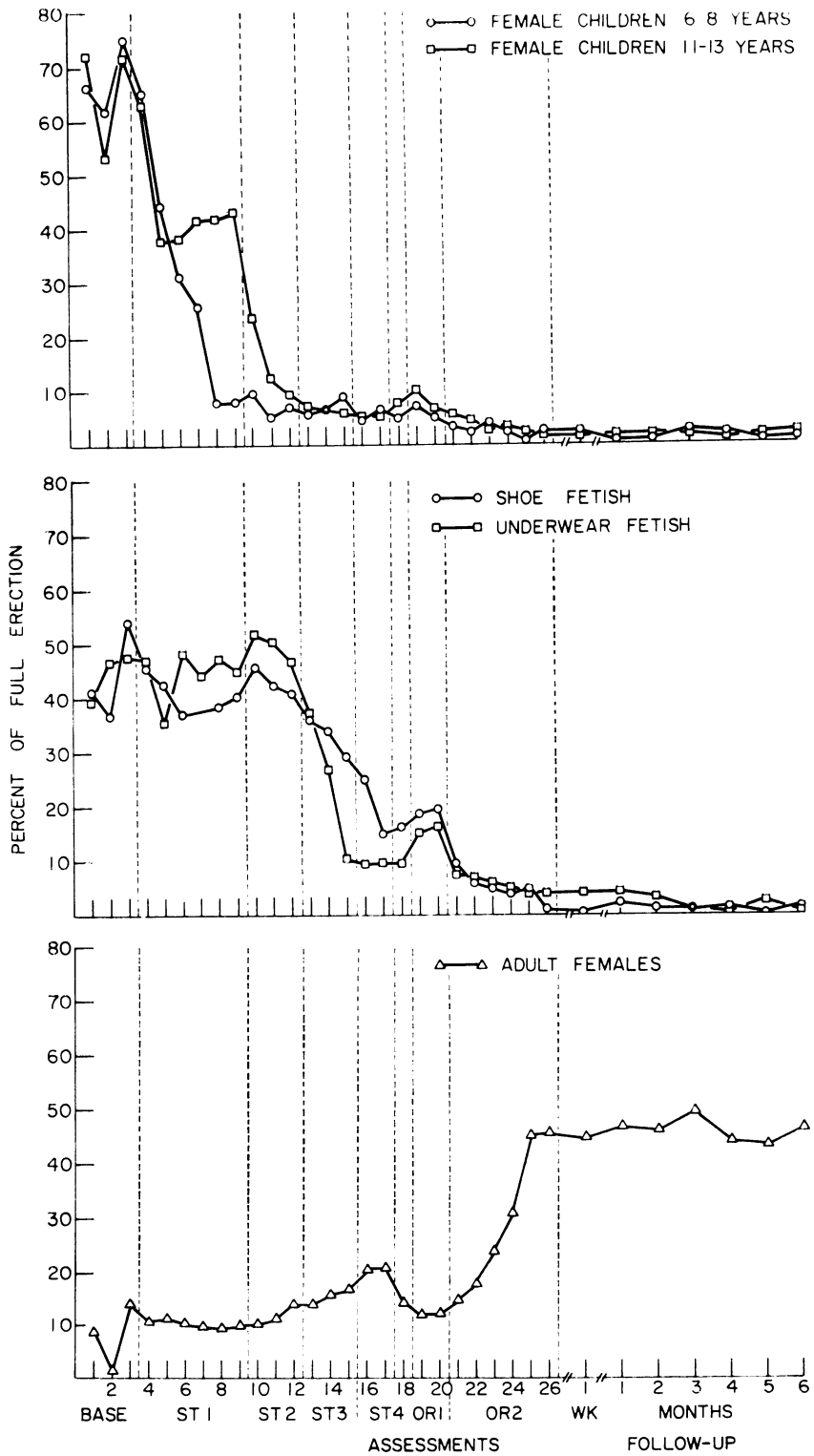

Fig. 1. Average amplitude of penile responses of Case 1 expressed as a function of full erection.

Table 1
Case 1 Self-Ratings of Various Sexual Stimuli

Stimuli	Base-line	Post ST1	Post ST2	Post ST3	Post ST4	Post OR1	Post OR2	Follow-up Months: Wk 1	1	2	3	4	5	6
Female children 6 to 8 years	76	12	4	0	0	0	0	0	0	0	0	0	0	0
Female children 11 to 13 years	82	24	5	0	0	0	0	0	0	0	0	0	0	0
Women's shoes	53	32	18	12	3	0	0	0	0	0	0	0	0	0
Women's underwear	62	43	14	2	1	0	0	0	0	0	0	0	0	0
Adult females	68	72	85	70	76	88	84	81	86	85	86	81	88	87

were some immediate collateral effects of targeting 6- to 8-year-old girls on the responses to 11- to 13-year-olds, these latter erectile measures stabilized after two sessions, and, if anything, began to increase until targeted themselves. There were similar effects on the shoe fetish as a concomitant of targeting the underwear fetish, and these effects were substantial enough so that if these two behaviors alone had been the subject of the study, I would not have been able to make any inferences about control over the behaviors. However, despite these tendencies, it is clear that the satiation procedure was the effective agent that produced positive changes.

Figure 1 also suggests that the laboratory version of orgasmic reconditioning was the effective component in producing an increase in appropriate arousal. The self-managed OR1 appeared to have detrimental effects, whereas the introduction of OR2 resulted in immediate and substantial improvements in heterosexual responsivity.

The changes produced by treatment were matched by the patient's self-reports (see Table 1) although the positive changes in these ratings were rather rapid and dramatic and depicted an exaggeratedly "normal" pattern. In this respect they did not match the course of changes revealed by the penile data and might be considered suspect.

The in-treatment data presented in Table 2 indicate that both latency to first ejaculation and the thematic quality of verbalized fantasies can serve as good indicators of progress in treatment. The number of ejaculations per session was too low in this individual to reveal anything of consequence.

The patient was delighted to gain control over behaviors he had previously considered to

Table 2
Case 1 Within-Treatment Data during Satiation

	Treatment Sessions: ST1						ST2			ST3			ST4		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Latency (in mins) to first ejaculation	15	9	10	12	26	31	18	33	31	7	18	24	22	28	26
Number of ejaculations	2	3	2	2	1	1	1	1	1	2	1	1	1	1	1
Therapist's ratings of quality of verbalized fantasies	5	8	8	6	3	3	6	4	2	5	2	1	2	1	1

be beyond control. His wife reported markedly increased satisfaction not only in the sexual aspects of their marriage (she described her husband as more "horny" and much more "involved" in sex than before) but also in the rest of their interpersonal relations and in his involvement with the family. The benefits of treatment were maintained over the 6-month follow-up period as manifest in the pattern of erectile responses, as well as by the patient's own reports and those of his wife.

CASE 2

This 36-year-old male was referred for treatment by the Canada National Parole Board after he had been discovered having intercourse with his 3-year-old daughter. He had a long history of heterosexual pedophilia involving contacts with female children ranging in age from 3 to 13 years and had been jailed on two occasions for these offenses. His preferred activities covered the full range of heterosexual behaviors, and in addition he gained added sexual pleasure with the younger group of girls (3 to 6 years) by making them cry as a result of threatening or actually slapping them.

The patient was married, with two young children, and both he and his wife claimed that they had intercourse frequently and that it was mutually enjoyable. However, the patient admitted that his wife wanted sex more often than he did, and that even with young girls, he did not feel sexual desire more than once per week.

He would characteristically befriend his victims and become their confidant and protector before he lured them into sexual activities. He reported that the development of this type of relationship was important to him as it made him "feel manly and strong," and that sex with naive young girls added to these feelings of masculine confidence. The patient also added that he felt unsure of himself in sexual situations with adult females.

This man also reported strong homosexual interests which took overt form on the two occasions he had been imprisoned. Otherwise he claimed never to have bothered contacting males for sexual purposes, and he likewise disclaimed any interest or involvement with young boys.

PROCEDURE

Assessment

All assessments were conducted in the same manner as for Case 1 except that the penile measures had to be converted into percentages of maximal daily responses rather than proportions of full erection. This modification in the representation of the data was necessitated by the considerable daily fluctuations in overall levels of responding which tended to obscure the consistency in the patterning of the responses and blurred the effects of treatment. Just why this man showed such changes in day-to-day sexual responsiveness is not clear, but perhaps this was simply another reflection of his reported infrequent interest in sex.

Figure 2 shows the average amplitude of the patient's responses to adult males, adult females, and young females. The patient showed no responsiveness to young boys so those data are omitted. Except for his sadistic leanings, his responses to all age groups of young girls were equally strong and undifferentiated so they were collapsed into a single category.

Self-ratings and within-treatment data were collected as in Case 1 except that the quality of the fantasies was not estimated.

Treatment

The aim in this case was to compare the relative efficacy of satiation with both a placebo and a well-established procedure (in this case, aversive therapy). Again it did not seem possible to commence treatment by increasing appropriate arousal as the patient claimed that he was substantially aroused by sexual interactions with adult females despite the assessment data to the contrary. The course of events during the study took the following pattern: Pretreatment Baseline (Base 1), followed by Self-esteem training

(SE Trg), followed by Aversive Therapy (AT), followed by another Baseline (Base 2), and finally Satiation was implemented.

Self-esteem training focused on social functioning and followed the program outlined by Khanna and Marshall (Note 2) which involved three components. The first component required that the patient and the therapist together produce a list of 10 statements describing realistic, and usually modest, positive characteristics of the patient. These statements were written on a small card which the patient carried with him and used as a stimulus to emit self-praise repeatedly throughout each day with the emission of these statements being associated with a pleasant event (*e.g.,* talking to attractive female patients, having meals, playing pool, swimming, *etc.*). Earlier research (Marshall, Christie, and Lanthier, Note 3) had shown that preceding (cueing) the emission of these self-statements with a pleasant event was equally as effective as following (reinforcing) such statements with the pleasant event. The second step required the patient (following Beck, 1974) to identify both his characteristically negative ways of construing his behavior and his unrealistically perfectionist standards for judging his performance. Having identified these inappropriate behaviors, the patient was assisted in lowering his standards and in developing habits of construing his performance in more positive ways. Finally, the patient was instructed to increase the frequency and range of social contacts (particularly with the opposite sex), and he was advised to do this with some caution in order to maximize the possibility of success. Some advice on effective social skills was also given to this patient, although he was reasonably competent so that careful training was not necessary.

The rationale for using this procedure included reference to his own admission of lack of confidence in sexual situations with women and the "protector" role he enjoyed with young girls. He was offered interpretations also (albeit somewhat contrived) of the relationship between his lack of confidence with women and the sexual pleasure he derived from making the very young girls cry. He was told that his low self-esteem in relation to adult females had led him to seek children as sexual objects so that he could experience mastery and power over them. The patient responded to this explanation and the suggested program with enthusiasm and conviction.

Aversive therapy followed the program described by Marshall (1973) and involved associating an unpleasant electrical stimulus to the calf muscle of the leg with the auditory presentation of the patient's deviant fantasies accompanied by sexually provocative slides of young girls. The slides were chosen by the patient from a large array as the most sexually attractive, and the fantasies were designed by the therapist and patient together so that they depicted his actual experiences with children or represented his most desirable fantasies. During treatment the patient was seated in a room alone where he watched the slides projected onto a screen in front of him while listening to the fantasies through earphones. He was instructed to involve himself sexually as completely as possible in the material. The electrical stimulus was set at an intensity that was defined by the patient as unpleasant but tolerable, and was delivered at various points throughout the fantasy that were unpredictable by the patient. This procedure has been shown to be effective with pedophiles (Marshall, 1973; Marshall and Williams, Note 1; Marshall, Williams, and Christie, Note 4). The satiation procedure matched that described in Case 1.

Results

In order to evaluate the effectiveness of the self-esteem training on the patient's confidence in social situations, he was required to complete the Social Self-esteem Inventory (Lawson, Marshall, and McGrath, 1978) before, during, and after the program. Despite the fact that his self-confidence improved substantially, as estimated by this measure, Figure 2 indicates that this had no effect on the patient's penile re-

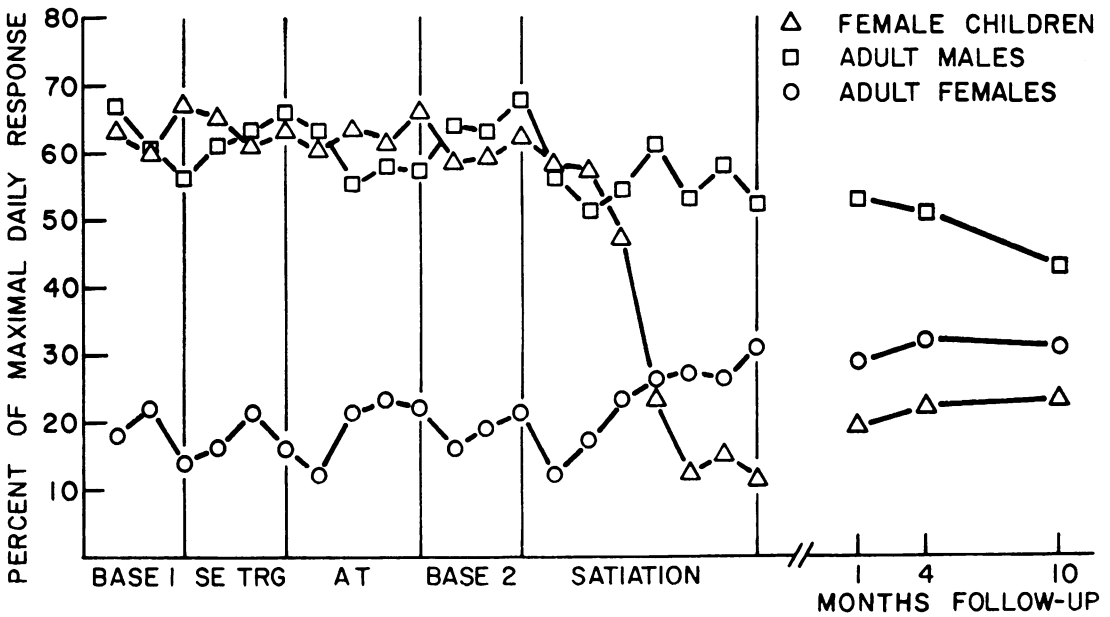

Fig. 2. Average amplitude of penile responses of Case 2 expressed as a function of maximal daily responses.

sponses. Nevertheless, he claimed that it had helped him greatly and his ratings of the sexual stimuli matched these reported improvements (see Table 3). Again, however, as with Case 1, the self-ratings appear to be biased either as a result of overconfidence or as a result of deliberate distortion.

Figure 2 shows little effect for aversive therapy although the self-ratings appeared to show an effect. Satiation, on the other hand, had very

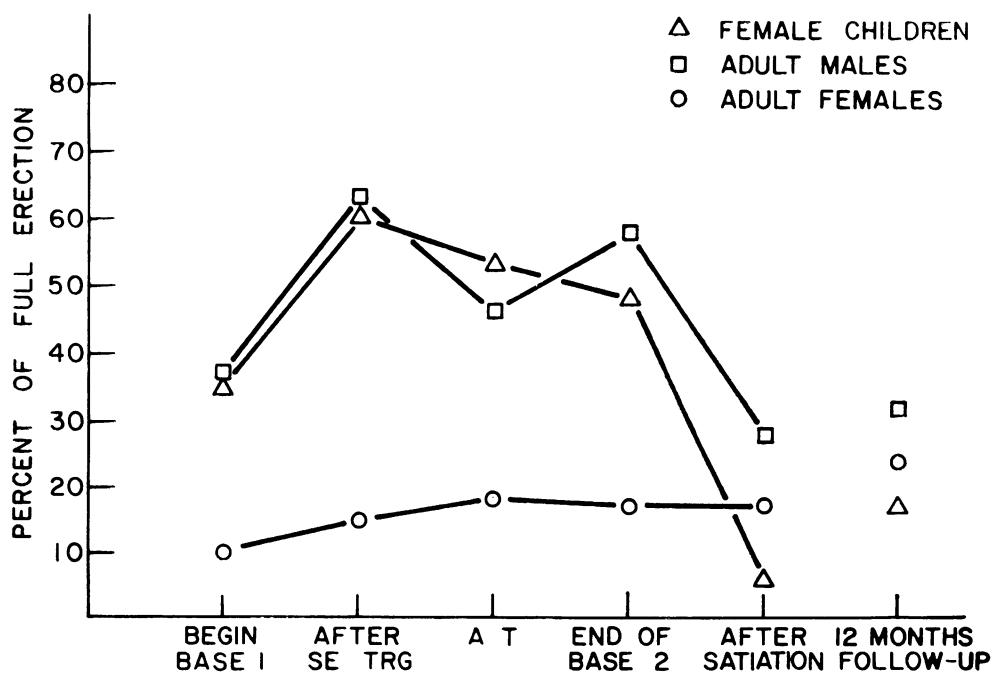

Fig. 3. Representative average amplitude of penile responses of Case 2 expressed as a function of full erection.

Table 3
Case 2 Self-Ratings of Various Sexual Stimuli

Stimuli	Base 1	Post SE Trg	Post AT	Base 2	Post Satiation	Follow-up 1 mo	Follow-up 4 mo	Follow-up 10 mo
Female children	54	46	21	28	16	18	12	16
Adult males	36	30	34	38	28	33	30	35
Adult females	38	68	58	52	61	53	67	54

clear and marked effects on erectile responses and these were matched by the pattern of self-ratings.

Since the erectile measures were represented as proportions of maximal daily responses, this makes comparison with other data difficult. Therefore, Figure 3 describes selective aspects of the data represented as percentages of full erection. Essentially the same results are apparent although they are not as clear as they are in Figure 2.

Follow-up data revealed a maintenance of treatment gains, and the patient's wife reported a marked increase in her husband's enthusiasm for sexual relations with her and a considerable improvement in their affectional relationship generally. Those increases in heterosexual responsiveness revealed by Figure 2 were quite likely the result of this improvement in functioning between the patient and his wife. In any case neither felt any need to target this aspect of the patient's sexual responsiveness.

The within-treatment data during satiation are shown in Table 4 and they reveal a somewhat different pattern from Case 1. Whereas the first patient apparently required time to adjust to the situation, the present patient appeared to be at ease and claimed that he felt no embarrassment or difficulty masturbating in the treatment room even though he was aware of the therapist's presence in the adjoining office. This claim was certainly supported by the rapidity with which he initially ejaculated during the first two sessions and by the fact that he ejaculated three times in each of these sessions. The changes in ejaculatory latency and frequency, thereafter, corresponded to the improvements noted on the assessments.

Table 4
Case 2 Within-Treatment Data During Satiation

	Treatment Sessions 1	2	3	4	5	6	7
Latency (in mins) to first ejaculation	8	6	14	32	28	38	*
Number of ejaculations	3	3	2	1	1	1	0

*Failed to ejaculate during session.

DISCUSSION

The two single-case analyses presented here demonstrate the controlling effects of the satiation procedure in reducing deviant arousal. In Case 1 the controlling effects of satiation were demonstrated by the independent effects of targeting deviant behaviors in sequence, whereas in Case 2 the failure of self-esteem training and aversive therapy to produce effects was followed by a marked reduction in deviant arousal with the introduction of satiation. Thus, satiation is not only an effective procedure for reducing deviant sexual interests, it also appears to be valuable when aversive therapy has failed.

Case 1 indicated that even though deviant responding is all but eliminated there is not necessarily a reciprocal improvement in heterosexual responsivity. Case 2, on the other hand, demonstrated improvements in appropriate arousal as a result of reducing deviant responses in the absence of any procedure specifically aimed at enhancing heterosexuality. In neither

case did it seem appropriate, or even possible, to attempt to increase arousal to adult females before some reduction in deviant interests was obtained. These observations are directly contrary to the opinion of Barlow and Abel (1976) who argue that "Clinically, the best course is to increase heterosexual arousal before decreasing deviant arousal" (p. 358). They claim that the removal of all sources of sexual arousal (which they apparently equate with the reduction of all erectile responses at assessment sessions) will lead to depression. Despite the apparent loss of all sources of sexual arousal in Case 1, through at least sessions 18 to 21, the patient, far from being depressed, reported that he was happier and more optimistic than he had been in years and his wife confirmed this.

The rather surprising slightly negative effects resulting from orgasmic reconditioning conducted in the usual self-managed way (OR1) with Case 1 suggest that caution should be exercised in advocating the use of this procedure. In an examination of orgasmic reconditioning with homosexuals, Conrad and Wincze (1976) found the procedure to be ineffective when conducted in the recommended self-managed way, whereas Abel, Barlow, and Blanchard (Note 5) demonstrated that laboratory-conducted treatment, along lines similar to the procedures used on OR2, was remarkably successful. Similarly, Van Deventer and Laws (Note 6) found that having subjects verbalize appropriate sexual fantasies while masturbating to ejaculation produced positive increases in erectile responding. With Case 1 the switch to the laboratory-based OR2 produced positive and substantial increases in the arousing properties of adult heterosexual stimuli further suggesting that orgasmic reconditioning may be best conducted under controlled conditions.

The procedure under examination was described as "satiation" to imply that the important procedural elements concerned the excessive prolongation of the patient's preferred sexual activity to the point that these activities lost their attractiveness. There are, however, clearly alternative interpretations of the effectiveness of the procedure. Procedurally the obvious components involve: (a) verbalizing the fantasies; (b) associating this activity with masturbation; and (c) extending these activities beyond orgasm. Subsequent experimental analyses of the value of each of these components and their various combinations will facilitate our understanding of the effective mechanisms of this procedure.

One explanation for the benefits observed concerns the possible role of punishment or aversiveness in the procedure. This may result from associating the deviant activities with the unpleasant nature of prolonged masturbation, or with the labor of continually generating fantasies, or with the shame and embarrassment associated with verbalizing the fantasies. On the latter point, it is interesting to note that the patient in Case 2 apparently felt no discomfort in the situation, and his within-treatment data appear to confirm this. Of course, the patient's strong homosexual interests and the fact that the therapist was a male may have been factors that facilitated his sexual responsiveness or reduced his embarrassment. But whatever the reasons, he certainly did not appear to be uncomfortable, and yet the effects of the procedure were marked.

Repeated exposure to the deviant fantasies, of course, may exhaust the capacity of the patient to respond to them, and this may be the essential ingredient of the procedure. However, if this is the case, then aversive therapy in Case 2 should have been effective. That it was not suggests that simple prolonged exposure to the deviant fantasies is not sufficient, and it may be that the necessary factor is the patient's verbalization of the fantasies. Making fantasies explicit by verbalizing them may remove their vagueness or the taboo associated with them, both of which may reduce the attractiveness of the activities.

All of these possibilities await more detailed examination which seems worthwhile consider-

ing the apparent effectiveness of the procedure. The results of these future studies may not only reveal the active ingredients of the satiation procedure but also tell us more about the maintenance of deviant sexuality.

As a final point, the apparent lack of value of both patients' self-ratings of the stimuli might be noted. These ratings changed to a "normal" pattern rather too rapidly and well ahead of changes in erectile responding. In view of Rosen and Kopel's (1977) recent report it is tempting to conclude that our patients were dissimulating. However, despite early and substantial changes in these self-reports, neither patient expressed a wish to terminate treatment and remained cooperative throughout the long and often tedious procedures. Nevertheless, the pressure on sexual deviants to show changes in their sexuality is so great that therapists should not rely on self-reports but should always employ the more objective penile erectile descriptions of sexual arousal patterns as part of the evaluation of treatment changes.

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